

Introducing an easy new surgical method for repairing vaginal vault prolapse

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BACKGROUND: Vaginal vault prolapse can occur in patients who had abdominal or vaginal hysterectomy. The aim of this study was to introduce a new method of vaginal vault suspension for post-hysterectomy prolapse. **METHODS:** In this retrospective cohort study, 34 patients who were suffering from vaginal vault prolapse were undertaken two suspension procedures. 26 patients underwent abdominal round ligament colpopexy (ARLC) that the vaginal apex was tied to the remained round ligament and 8 patients experienced modified Le Fort partial colpocleisis (MLFPC). Intra operative and postoperative complications and patient's satisfaction were assessed. **RESULTS:** The age of studied patients was 58.2 ± 5.5 (mean \pm SD) ranged from 42 to 75 years. No serious complication was reported at the post operative stage and during the follow-up period among patients participated in the two groups. Minor complications including urinary retention were experienced by two patients (one in each group). In ARLC group, one superficial wound infection and two recurrent prolapses occurred. There was no statistically significant difference between two groups in terms of post-operative complications. **CONCLUSIONS:** ARLC can be considered as a simple, safe and cost-effective alternative technique for vaginal vault suspension after hysterectomy.

KEYWORDS: Vaginal Vault, Suspension, Prolapse, Colpocleisis, Abdominal Round Ligament Colpopexy

BACKGROUND

After caesarian, hysterectomy is the most frequent surgical operation. The vaginal vault prolapsed can be encountered in patients who had abdominal or vaginal hysterectomy. The age dependency of hysterectomy and problem of its repair are reasons that incidence of post-hysterectomy vaginal vault prolapse is between %0.1 to %1.^[1] The vaginal vault prolapse is often associated with a feeling of backache, pelvic heaviness, pressure, fullness and thing falling out. These symptoms may be aggravated by standing and may be relieved when lying down.^[1,2] There may be vaginal discomfort, dyspareunia and impaired vaginal intercourse because something is in the way.^[2,3]

The patient's sexual partner may also complain that the vagina is too large. If the vaginal skin is ulcerated, there may be troublesome discharge and bleeding.^[1]

Non operative treatment may be included a change in the patient's lifestyle so that heavy lifting is eliminated. Estrogen replacement is recommended and the patient can be instructed in initiating a long-term course of Kegel or perineal resistive exercise or Pessary inserted into the vagina for correction of prolapse.^[4,5] The gynecologic surgeon

who attempts to correct vaginal vault prolapse may be operated transvaginal or transabdominal or a combination of them.^[5]

Because of increasing number of elderly women who enjoy full and active lives, many are sexuality active into their seventh and eighth decades. Although this problem does not shorten or threaten life, it can significantly decrease quality of life and is problematic for gynecological surgeons to repair by operation. This attempt was done as a new approach for vaginal vault prolapsed encountered by hysterectomy.

METHODS

in a retrospective cohort structure (from 1995 to 2010) 34 patients who suffered from vaginal vault prolapse were candidate for surgical repair (26 of them experienced Abdominal Round Ligament Colpopexy that the vaginal apex was tied to the remained round ligament and 8 patients experienced Modified Le Fort Partial Colpocleisis) in Hajar Hospital (Shahrekord), Alzahra and Shahid Beheshti Hospitals (Isfahan). Physical examination and personal information were obtained at the pre operation stage using questionnaire and medical chart review. Intra- and post-operative complications were recorded.

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Received: 17.11.2011; **Revised:** 15.12.2011; **Accepted:** 25.01.2012

Procedures of surgery**- Abdominal round ligament colpopexy**

The patient was placed in the lithotomic position. A Pfannenstiel incision was made in the abdominal wall. With this incision, peritoneal cavity was entered, the bowel was packed into the upper abdomen with some long gauze, and a self-retaining retractor was inserted until a sufficient visual field was made.

The vagina cuff was usually easily recognized. If there was any uncertainty, a vaginal examination through the introitus by assistant can be used to elevate and manipulate the vaginal apex in the pelvis. The vaginal apex was grasped with two Babcock forceps (one at each lateral angle of the vagina). The peritoneum overlying the vaginal apex was then incised and dissected with a curved Metzenbaum dissecting scissors from the anterior and posterior vaginal wall for a distance of 1 to 2 cm, carefully, so that the bladder was not impaired.

The remnants of each round ligament that remained from the previous hysterectomy were grasped with one Babcock forceps, and were pulled to the vaginal apex with the long curved forceps through the retro peritoneum. Then, the vaginal apex was tied to the round ligament with three No 1 permanent sutures (silk) those were placed in the three point of round ligament and vaginal apex was fixed to the remnants round ligament.

After bilateral vaginal vault suspension, the part of the peritoneum that initially had been opened was repaired with No. 2-0 chromic sutures and for reperitonealization after that, self-retaining retractor was removed. Finally, the abdominal incision was closed and as the final stage posterior colpoperineorrhaphy and levatorplasty was done.

- Modified Le Fort partial colpocleisis

This procedure was selected for patient who did not have sexually active life. Such as Le Fort partial colpocleisis, vaginal vault exposed and anterior vaginal mucosa partially excised from the underlying endopelvic fascia by sharp dissection, 2 cm proximal to the vaginal exposed apex to 4 cm below the external meatus.

Mirror dissection on the posterior aspect of the vagina was done. Because, the rate of post operative urinary stress incontinence for Le Fort partial colpocleisis had been reported 30%, a placation suture was placed at the bladder neck.

A series of purse string sutures were used to invert

the prolapsed and endopelvic fascia once the prolapsed was reduced. Then a posterior colpoperineorrhaphy and levatorplasty was done.

Statistical analysis

Quantitative variables were expressed as mean \pm SD and qualitative variables as frequency and percent. Between groups comparisons in terms of quantitative variables were done using two-independent samples t-test and Mann-Whitney non-parametric test when it was appropriate. Differences between groups in categorical variables were tested with Pearson's chi-square test with Yates's continuity correction or Fisher's exact test. All statistical analysis was conducted using SPSS statistical package (version 16; SPSS Inc, Chicago IL, USA).

RESULTS

The mean (SD) age of studied patients was 58.2 ± 5.5 years ranged from 42 to 75 years. The range between times of hysterectomy till vaginal vault repair was from 1 to 20 years. 26 women were undertaken Abdominal Round Ligament Colpopexy and 8 women underwent Modified Le Fort Partial Colpocleisis. Mean age for Abdominal Round Ligament Colpopexy and Modified Le Fort Partial Colpocleisis patients were 57.11 and 61.62 years, respectively. Majority of the patients participated in the study did not have any medical problems, only a few of them had some metabolic disorders. However, there is no statistically significant difference between two studied groups in terms of history of medical problem (Table 1).

Among 34 patients with vaginal vault prolapse, 30 (88.2%) had undergone abdominal hysterectomy and 4 (11.7%) patients experienced vaginal hysterectomy (Table 1). Pre operation symptoms were comparable between studied groups (Table 2).

To track the experienced complications, the patients were examined every 3 months during the follow up period (9 months to 13 years; 60 ± 24.5 months). No post operation serious complications were reported during follow up period. However, minor complications including urinary retention were experienced by two patients (one in each group) and in ARLC group, one superficial wound infection and two recurrent prolapses were experienced by patients. There is no statistically significant difference between two groups in terms of post-operative complications ($\chi^2=0.194$, $p = 0.91$). Also, there was no statistical significant difference between two studied group in terms of surgical duration (30 ± 5 vs. 27 ± 7 minutes; $p = 0.12$). The two studied groups were not different in terms of duration

Table 1. Basic and clinical characteristics of study participants

	ARLC	MLFPC	Total
Cause of hysterectomy:			
Mayoma N (%)	5(14.8)	4(11.7)	9(26.5)
Abnormal vaginal bleeding N (%)	12(35.2)	6(17.6)	18(52.8)
Abnormal pap smear N (%)	1(2.94)	1(2.94)	2(5.88)
Ovarian mass N (%)	2(5.88)	0	2(5.88)
Postpartum hemorrhage N (%)	2(5.88)	0	2(5.88)
Atonia	2(5.88)	0	2(5.88)
Placenta previa or accreta N (%)	2(5.88)	0	2(5.88)
Ruptureuterus N (%)	0	1(2.94)	1(2.94)
Type of hysterectomy:			
Total abdominal hysterectomy N (%)	24(71)	6(17.6)	30(88.6)
Total vaginal hysterectomy N (%)	2(5.88)	2(5.88)	4(11.4)
Medical history:			
Hyper lipidemia N (%)	4(11.7)	6(17.6)	10(29.3)
Hypertension N (%)	3(8.83)	5(14.8)	8(23.63)
Diabetiis N (%)	4(11.7)	3(8.83)	7(20.53)

ARLC: Abdominal Round Ligament Colpopexy, MLFPC: Modified Le Fort partial colpocleisis

Table 2. Patient symptoms before surgery

	ARLC	MLFPC	Total
Protrusion N (%)	26(76.48)	8(23.52)	34(100)
Flank pain N (%)	10(29.4)	2(5.88)	12(35.2)
Backache N (%)	6(17.6)	5(14.8)	11(32.4)
Urinary frequency N (%)	12(35.2)	6(17.6)	18(52.8)
Dysuria N (%)	5(14.8)	6(17.6)	11(32.4)
Dribbling N (%)	5(14.8)	4(11.7)	9(26.5)
Recurrent urinary tract infection N(%)	8(23.52)	7(20.58)	15(44.1)
Lower abdominal pain N (%)	6(17.6)	5(14.8)	11(32.4)
Constipation N (%)	7(20.58)	6(17.6)	13(38.2)
Vaginal discharge N (%)	9(26.74)	8(23.52)	17(50.26)
Pelvic heaviness N (%)	9(26.74)	7(20.58)	16(47.32)
Vaginal ulcer N (%)	3(8.83)	2(5.88)	5(14.71)
Impaired intra vaginal intercourse N (%)	5(14.8)	4(11.7)	9(26.5)

ARLC: Abdominal Round Ligament Colpopexy, MLFPC: Modified Le Fort partial colpocleisis

of stay in hospital (2 ± 5.88 days for both groups). 32 (94.1%) of the patients expressed their satisfaction about the result of operation. Only two cases were dissatisfied due to recurrent prolapse (Table 3).

DISCUSSION

In this study, from 1995 through 2010, 34 women underwent primary repair of post-hysterectomy vaginal vault prolapse. According to the results in two

methods, there were no ureterovaginal fistula, vaginal cuff infection or abscess, vault hematoma, enterocele, bowl injury, bladder laceration, urethral impairment, sever hemorrhage, dynamic ileus or mechanical post-operative obstruction. There are some modalities for vaginal vault prolapsed. Pessary is non-surgical management that inserted into the vagina for correction of prolapse.^[4,5] Vaginal evisceration during pessary fitting has been reported in 82 years old woman.^[6]

Table 3. Intra- and post-operation complications among patients participant

	ARLC	MLFPC	P-value
Intra operation complications:			
Bleeding N (%)	2(5.88)	0	0.8
Hematoma N (%)	2(5.88)	0	
Post operation complications:			
Urinary retention N (%)	1(2.94)	1(2.94)	0.91
Superficial wound infection N (%)	1(2.94)	0	
Recurrent prolapse N (%)	2(5.88)	0	

ARLC: Abdominal Round Ligament Colpopexy, MLFPC: Modified Le Fort partial colpocleisis

Two patients underwent subsequent vaginal vault repair because of recurrent prolapse after the primary abdominal round ligament colpopexy. The second operation occurred one month after the primary operation. For repair and decrease recurrent prolapse, native tissue is recommended.^[7,8] Laparoscopic sacral colpopexy approach is new method for vaginal vault prolapse.^[3,5,9]

At the time of surgery, body mass index, parity and age are important factors for method selection and long term outcome after repair.^[10,11] There are new surgical methods for repairing vaginal vault prolapse that after laparotomy, vaginal wall resected and closed vagina with absorbable suture.^[12] For treatment of recurrent vaginal vault prolapse, there are some modalities.^[13-15] The rate of post-operative urinary stress incontinence for Le Fort Partial colpocleisis has been reported 30%, and recommended that a placation suture placed at the bladder neck, but new method was reported for stress incontinence with colpocleisis.^[16,17]

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How to cite this article: Danesh Shahraki A, Feizi A. Introducing an easy new surgical method for repairing vaginal vault prolapse. *J Res Med Sci* 2012; 17(Spec 2): S186-S189.

Source of Support: Nil, **Conflict of Interest:** None declared.